DOCUMENT RESUME

ED 069 473 SE 014 716

TITLE	Directory of In-Service Institutes for Secondary School Teachers and Supervisors of Science, Mathematics and Social Science.
INSTITUTION	National Science Foundation, Washington, D.C.
REPORT NO	NSF-72-8
PUB DATE	May 72
NOTE	37p.
AVAILABLE FROM	National Science Foundation, Washington, D.C. 20550
EDRS PRICE	MF-$0.65 HC-$3.29
DESCRIPTORS	Biology; Chemistry; *Directories; Earth Science; Environmental Education; *Inservice Programs; *Inservice Teacher Education; Mathematics; Physics; *Science Institutes; Secondary School Science

ABSTRACT

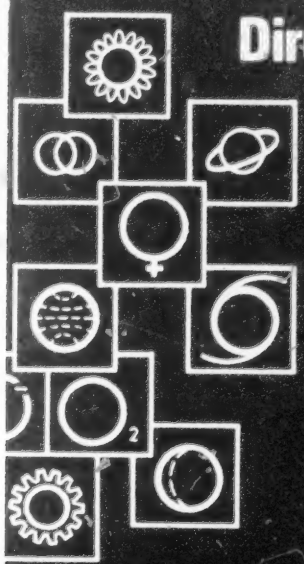
Listed are the in-service institutes sponsored by the National Science Foundation for secondary school teachers during the 1972-73 academic year. The broad areas included in the institutes are biology, chemistry, engineering, environmental studies, earth sciences, physical science, social science, and mathematics. Also included are brief descriptions of seven comprehensive projects which represent integrated approaches to teacher education with both pre- and in-service components. Such institutes can be attended for full- and part-time study during the year and summer. (PS)

U.S. DEPARTMENT OF HEALTH
EDUCATION & WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

ED 069473

nsf

1972-73 Directory



IN-SERVICE INSTITUTES

for Secondary School Teachers and Supervisors of Science, Mathematics and Social Science

SE 014 716

Directory of
In-Service Institutes for
Secondary School Teachers and
Supervisors of
Science and Mathematics
1972-73

INTRODUCTION:

Through its In-Service Institutes Program, the National Science Foundation awards grants to colleges and universities to enable them to provide secondary school instructional, supervisory and resource personnel with the training necessary for the improvement of science and mathematics education in their schools. Funds awarded to the institutions taking part in this program in the 1972-73 academic year will make approximately 9,300 study opportunities available to secondary school teachers and supervisors of science and mathematics.

The instructional programs of the institutes are so designed as to make it possible for participants to pursue their studies while carrying on their regular teaching duties. Although it is quite common for an institute class to meet for about three hours once a week during the entire academic year, with some meetings being devoted to laboratory or field work, In-Service Institutes are not restricted to a particular schedule format. Sometimes a more concentrated schedule is planned for vacation periods, or an institute is completed in one semester. In some institutes the project may begin with a week of daily classes in late August; then, when school starts in September, additional meetings may be held on a weekly or biweekly basis. In metropolitan areas there are some part-time institutes which are conducted daily during several weeks of the summer. As in other In-Service Institutes, participants in such projects may receive travel and book allowances but no stipends.

Many institutes enable teachers who may have received little formal scientific education beyond that of their undergraduate preparation

to obtain additional knowledge of subject matter. Others are designed to acquaint teachers with important new textual and laboratory materials developed by a number of study groups. Still others are concerned with modification and adaptation of existing materials to meet local needs. A number of institutes are planned to offer a sequence of courses over a period of years. These may afford participants the opportunity to study in a master's degree program, frequently in combination with participation in related Summer Institutes.

Similar opportunities are also available within the context of interrelated sets of teacher education activities conducted at 7 Comprehensive Projects designed to enable teachers to pursue coordinated sequences of work leading to career goals. A listing of these projects follows the list of In-Service Institutes.

Selection for participation will depend in large measure on the benefit that may derive to the instructional program of applicants' school.

In the operation of the institute and in selecting individuals for participation in, and for administration of, the institute, the host institution will not discriminate on the ground of the race, creed, color, sex, or national origin of any applicant or participant.

ELIGIBILITY

Teachers of science or mathematics, or both, in grades 7 through 12 in public or non-public schools are eligible to apply for admission to the institutes listed in this directory and to receive National Science Foundation support. Supervisors of instruction in mathematics or science in secondary schools are also eligible, provided that such supervision is their primary responsibility.

SUPPORT

Participants will not be charged tuition and fees. In addition, travel allowances for costs incurred in commuting and book allowances may be provided.

INQUIRIES AND APPLICATIONS

Requests for informational brochures and application forms, as well as other inquiries, should be sent to the appropriate institute director at the address listed on the following pages. The colleges and universities involved handle admissions to institute programs on the basis of their own individual requirements. The National Science Foundation plays no part in determining which applicants are to be admitted to the institutes nor can it provide information as to the detailed admission requirements of the sponsoring institutions.

A deadline date for receipt of applications is set in each case by the institute director and is listed in the local brochure. Eligible teachers and supervisors are urged to submit their applications early in order to be assured of consideration for admission to the program, although in many cases applications can be considered until the beginning of the course. Other interested individuals may be permitted to attend institute classes without receiving allowances, at the discretion of the institute director.

LIST OF IN-SERVICE INSTITUTES, 1972-73

The following brief description of each institute indicates the type of institute, the general nature of the academic offerings, the number and type of personnel eligible for participation, and the location of the institute classes.

Many of the institutes are designed to implement specific curriculum revisions. The names and abbreviations of these are listed below:

BSCS ——Biological Science Curriculum Study

CHEMS —Chemical Education Material Study

ECCP ——Engineering Concepts Curriculum Project

ES————Environmental Studies for Urban Youth

ESCP ——Earth Science Curriculum Project
IPS ——Introductory Physical Science
ISCS ——Intermediate Science Curriculum Study
MACOS —Man: A Course of Study
PPC ——Project Physics Course, formerly listed as HPP (Harvard Project Physics)
PS II ——Physical Science (IPS 2nd level)
PSSC ——Physical Science Study Committee
SMSG ——School Mathematics Study Group
SRSS ——Sociological Resources for the Social Studies
SSMCIS —Secondary School Mathematics Curriculum Improvement Study
UICSM —University of Illinois Committee on School Mathematics

Secondary school teachers of science and mathematics are, in general, eligible to participate in all of the institutes described in this directory. To provide guidance for teachers in the selection of institutes best suited to their needs, backgrounds, and teaching levels, however, the following code symbols are employed in the description of the individual projects:

Un ——a unitary type of institute, which is designed to offer study during a single year for a particular group of participants.

Un* ——a unitary institute which is part of a combined summer/in-service program of study.

Seq ——a sequential type of institute, which is part of a coordinated sequence of in-service institutes designed to enable qualified participants to return in successive years to work toward a specific goal.

Seq* ——— a sequential institute which is part of a coordinated sequence involving both in-service and summer institutes.

J ——— primarily for teachers of grades 7-9, including grades 7-8 in elementary schools.

S ——— primarily for teachers of grades 9-12.

JS ——— for teachers of grades 7-12 generally.

ALABAMA

UNIVERSITY OF ALABAMA IN BIRMINGHAM, Birmingham 35233. Dr. Robert L. Settine, Department of Chemistry, College of General Studies. *Simple Mathematical Applications to Chemistry, Modern Chemistry for Teachers, Modern Chemistry and its Relationship to Biological and Ecological Systems.* (Un, JS 20)

UNIVERSITY OF ALABAMA IN BIRMINGHAM, Birmingham 35233. Dr. Loy O. Vaughan, Department of Mathematics, University College. *Geometry for Teachers, Introductory Analysis for Teachers, I and II.* (Un, S 25)

MOBILE COLLEGE, Mobile 36613. Professor George A. Smith, Department of Mathematics. *Linear Algebra, Elements of Statistical Inference and Introduction to Probability Theory.* (Un, JS 25)

UNIVERSITY OF SOUTH ALABAMA, Mobile 36688. Dr. David M. Bjork, College of Education. *Social Sciences Curriculum Development-MACOS.* (Un, J 60)

ALASKA

UNIVERSITY OF ALASKA, ANCHORAGE, Anchorage 99504. Dr. Roland F. Stickney, Department of Education. *Environmental Science Curriculum Study.* (Un, JS 25)

ARIZONA

UNIVERSITY OF ARIZONA, Tucson 85721. Dr. Robert W. Hoshaw, Department of Biological Sciences. *Genetics and Evolution, Organic Chemistry, Computer Applications in the Earth Sciences.* (Un, JS 75)

UNIVERSITY OF ARIZONA, Tucson 85721. Dr. Arthur H. Steinbrenner, Department of Mathematics. *Computer Science, Mathematics-SSMCIS Seminar.* (Un, JS 20)

ARIZONA STATE UNIVERSITY, Tempe 85281. Dr. William S. Rawls, Department of Physics. *Mechanics for Teachers I, II.* (Un, S 20)

ARKANSAS

UNIVERSITY OF ARKANSAS (See page 32).

CALIFORNIA

UNIVERSITY OF CALIFORNIA, Berkeley 94720. Dr. Wayne L. Fry, Department of Paleontology. *Earth Sciences.* (Un*, JS 35)

UNIVERSITY OF CALIFORNIA, Berkeley 94720. Professor Edward C. Stone, School of Forestry and Conservation. *Biology-BSCS (Green Version).* (Un, S 25)

UNIVERSITY OF CALIFORNIA, Berkeley 94720. Dr. Lawrence F. Lowery, Dr. John D. Miller, School of Education (Science) and Lawrence Hall of Science. *Cooperative Model Project in Leadership Teacher Education.* (Classes to be held in Mt. Diablo Unified School District). (Un, JS 35)

CALIFORNIA STATE COLLEGE, FULLERTON, Fullerton 92631. Dr. George C. Turner, Department of Science and Mathematics Education. *Human Ecology.* (Un, JS 30)

CALIFORNIA STATE COLLEGE, SAN BERNARDINO, San Bernardino 92407. Dr. Gordon E. Stanton, Department of Education. *Sociology (SRSS) and Social Studies.* (Un, JS 20)

FRESNO STATE COLLEGE, Fresno 93710. Dr. Samuel P. Lyles, Jr., School of Natural Science. *Biological Science, Physical Science.* Additional participants accepted on a tuition-free basis without book or travel allowances. (Un, JS 30)

UNIVERSITY OF REDLANDS, Redlands 92373. Dr. J. Kenneth Trolan, Department of Physics. *Physics for Secondary Teachers.* (Un, JS 25)

SACRAMENTO STATE COLLEGE, Sacramento 95819. Dr. Arthur L. Costa, Department of Administration and Counselor Education. *Social Sciences-MACOS.* (Un, JS 30)

SAN DIEGO STATE COLLEGE, San Diego 92115. Dr. Dale E. Ingmanson, Department of Physical Science. *Physical, Chemical, Biological, Geological Oceanography.* (Un, JS 30)

SAN FRANCISCO STATE COLLEGE, San Francisco 94132. Dr. Raymond Sullivan, Department of Geology. *Earth Science-ESCP.* (Un, JS 25)

SAN JOSE STATE COLLEGE, San Jose 95114. Dr. Jean Beard, Department of Natural Science. *Intermediate Science Curriculum Study Strategy and Experiences.* (Un, J 25)

SAN JOSE STATE COLLEGE, San Jose 95114. Professor James M. Craig, Department of Biological Sciences. *General Microbiology.* (Un, JS 25)

SAN JOSE STATE COLLEGE (See page 33).

UNIVERSITY OF SANTA CLARA, Santa Clara 95053. Professor G. L. Alexanderson, Department of Mathematics. *Mathematics.* (Classes to be held in Santa Clara, Oakland and Aptos). (Seq*, JS 100)

SONOMA STATE COLLEGE, Rohnert Park 94928. Dr. Donald G. Duncan, Department of Mathematics. *Mathematics* (Un, JS 25)

UNIVERSITY OF SOUTHERN CALIFORNIA, Los Angeles 90007. Dr. Paul A. White, Department of Mathematics. *Intermediate Algebra, Junior High School Mathematics-SSMCIS. Ca'culus, Modern Geometry.* (Un, JS 100)

COLORADO

UNIVERSITY OF COLORADO, Boulder 80302. Dr. John D. Haas, Center for Education in the Social Sciences. *From Subject to Citizen—A Political Science Course.* (Classes to be held in two Denver-Metropolitan School Districts). (Un, J 30)

UNIVERSITY OF COLORADO, Colorado Springs 80907. Dr. Jack Sherman, Department of Science Education. *COLAMDA Mathematics.* (Un, J 25)

UNIVERSITY OF COLORADO, Colorado Springs 80907. Dr. Jack Sherman, Department of Science Education. *Physical and Social Science, The Man-Made World (ECCP).* (Un, S 20)

UNIVERSITY OF COLORADO—DENVER CENTER, Denver 80202. Dr. Frederick S. Allen, Dean for Social Sciences. *Structure of the Social Sciences.* (Classes to be held in Lakewood). (Un, J 120)

COLORADO COLLEGE, Colorado Springs 80903. Dr. Keith B. Kester, Chemistry Department. *Instrumental Methods of Chemical Analysis.* (Un, S 18)

COLORADO SCHOOL OF MINES, Golden 80401. Dr. Jerrold J. Burnett, Department of Physics. *General Physics-PPC, Physical Measurements, Physical Science-IPS, Introduction to Environmental Sciences.* (Un, JS 75)

FORT LEWIS COLLEGE, Durango 81301. Dr. Richard A. Gibbs, Department of Mathematics. *Mathematics Laboratory.* (Un, JS 25)

UNIVERSITY OF NORTHERN COLORADO, Greeley 80631. Dr. Richard D. Dietz, Department of Earth Sciences. *Earth Science.* (Classes to be held in southwestern Colorado). (Un, JS 30)

CONNECTICUT

FAIRFIELD UNIVERSITY, Fairfield 06430. Professor Robert E. Bolger, Department of Mathematics. *Geometry.* (Seq, S 35)

SAINT JOSEPH COLLEGE, West Hartford 06117. Sister M. Clare Markham, Department of Chemistry. *Environmental Chemistry.* (Seq*, JS 20)

DELAWARE

UNIVERSITY OF DELAWARE, Newark 19711. Dr. Clifford W. Sloyer, Department of Mathematics. *Mathematics.* (Un, S 25)

DISTRICT OF COLUMBIA

THE AMERICAN UNIVERSITY, Washington 20016. Dr. Leo Schubert, Department of Chemistry. *Chemistry, Earth Sciences, History and Philosophy of Science, Mathematics.* (Seq, JS 100)

THE GEORGE WASHINGTON UNIVERSITY, Washington 20006. Dr. Ruth A. Bari, Department of Mathematics. *Mathematics.* (Un, J 25)

FLORIDA

UNIVERSITY OF FLORIDA, Gainesville 32601. Dr. Caspar Rappenecker, Division of Continuing Education, College of Arts and Sciences. *Earth Science (ESCP).* (Classes to be held in Jacksonville, Orlando, Tampa, St. Petersburg and West Palm Beach). (Un, JS 150)

UNIVERSITY OF FLORIDA, Gainesville 32601. Dr. Caspar Rappenecker, Division of Continuing Education, College of Arts and Sciences. *Introductory Physical Science (IPS).* (Classes to be held in Tampa and Palm Beach County). (Un, JS 75)

UNIVERSITY OF FLORIDA, Gainesville 32601. Dr. Caspar Rappenecker, Division of Continuing Education, College of Arts and Sciences. *Mathematics for Junior High School Teachers (SMSG), Modern Geometry.* (Classes to be held in Clearwater, Lakeland and St. Petersburg). (Un, JS 100)

FLORIDA STATE UNIVERSITY, Tallahassee 32306. Dr. Paul Westmeyer, Department of Science Education. *Biology-BSCS (Special Materials or Green Version).* (Classes to be held in Miami). (Un, S 30)

GEORGIA

EMORY UNIVERSITY, Atlanta 30322. Dr. Charles T. Lester, Dean, Graduate School. *Introduction to Mathematical Structures and Applications, Probability and Statistical Inference, Introduction to Numerical Analysis.* (Un, JS 60)

UNIVERSITY OF GEORGIA, Athens 30601. Dr. Charles L. Koelsche, Department of Science Education. *Physical Science (IPS).* (Classes to be held in Gainesville). *Earth Science (ESCP).* (Classes to be held in Augusta). *Biological Sciences.* (Classes to be held in Columbus).
(Un, JS 75)

HAWAII

UNIVERSITY OF HAWAII, Honolulu 96822. Professor Katashi Nose, Department of Physics and Astronomy. *Electronics for PPC, PS II.* (Classes to be held on Oahu, Kauai, Maui/Hawaii). For Hawaii residents only. (Un, JS 20)

UNIVERSITY OF HAWAII, Honolulu 96822. Dr. Ruth E. M. Wong, Department of Mathematics. *Geometry, Calculus, Topics in Mathematics.* (Classes to be held in Honolulu, Hilo, Lihue and Wailuku). (Un, JS 80)

IDAHO

COLLEGE OF IDAHO, Caldwell 83605. Professor Boyd Henry, Department of Mathematics. *Introductory Calculus, Problem Solving (with Computer).* (Un. JS 35)

ILLINOIS

DE PAUL UNIVERSITY, Chicago 60614. Dr. Joseph E. Semrad, Department of Biological Sciences. *Biology.* (Seq, S 50)

UNIVERSITY OF ILLINOIS AT CHICAGO CIRCLE, Chicago 60680. Professor Alice Hart, Department of Mathematics. *Laboratory Approach to Learning Mathematics, Topics in Pre-Analysis Mathematics.* (Un, JS 62)

UNIVERSITY OF ILLINOIS AT CHICAGO CIRCLE, Chicago 60680. Dean Henry A. Setton, Engineering Administration, Box 4348. *The Man-Made World-ECCP.* (Un, S 25)

ILLINOIS INSTITUTE OF TECHNOLOGY, Chicago 60616. Dr. Earl Zwicker, Department of Physics. *Physics and the Teaching of Physics.* (Un*, JS 30)

ILLINOIS INSTITUTE OF TECHNOLOGY, Chicago 60616. Dr. Haim Reingold, Department of Mathematics. *Mathematics, Computers.* Includes summer program June 26-August 18, 1972. (Seq, JS 120)

KNOX COLLEGE, Galesburg 61401. Dr. Leland Harris, Department of Chemistry. *Demonstrational Techniques and Aids in Chemistry.* (Un, JS 25)

NORTHEASTERN ILLINOIS UNIVERSITY, Chicago 60625. Dr. Musa Qutub, Department of Earth Science. *Individualized Instruction in Earth Science with Emphasis on Students' Immediate Environment.* (Un, JS 25)

INDIANA

BALL STATE UNIVERSITY, Muncie 47306. Dr. Ramon L. Avila, Department of Mathematics. *Problems in the Teaching of Junior High School Mathematics.* (Un, JS 25)

UNIVERSITY OF EVANSVILLE, Evansville 47701. Dr. Ralph H. Coleman, Department of Mathematics, P.O. Box 329. *Applied Mathematics: Digital Computation.* (Un, JS 25)

INDIANA STATE UNIVERSITY, Terre Haute 47809. Dr. Lawrence E. Poorman, Department of Physics. *Physics and Biophysics.* (Un, JS 24)

UNIVERSITY OF NOTRE DAME, Notre Dame 46556. The Reverend Michael J. Murphy, C.S.C., Department of Geology. *Tectonics and Earth Structures, Earth Materials, Earth Science Practicum.* (Classes to be held in Chicago, Illinois). (Seq, JS 45)

UNIVERSITY OF NOTRE DAME (See page 33).

PURDUE UNIVERSITY, Lafayette 47907. Write: Dr. Robert D. Bechtel, Mathematics Section, Purdue University Calumet Campus, Hammond 46323. *Algebra, Geometry, Elementary Topology, Computer Programming, Numerical Analysis, Theory of Numbers, Logic, Statistics.* (Classes to be held in Fort Wayne, Hammond, Indianapolis, New Albany and Westville). (Seq, JS 240)

IOWA

UNIVERSITY OF IOWA, Iowa City 52240. Dr. Robert E. Yager, Science Education Center. *Unified Science Concepts (Development of Curriculum Models).* (Un, JS 25)

UNIVERSITY OF NORTHERN IOWA, Cedar Falls 50613. Dr. Robert W. Hanson, Department of Chemistry. *Environmental Science for Teachers of Chemistry and Physics.* (Un, S 25)

UNIVERSITY OF NORTHERN IOWA, Cedar Falls 50613. Professor Lyle K. Alberts, Department of Political Science. *Social Science for Junior High Teachers-MACOS.* (Classes to be held in Cedar Falls and cooperating school districts). (Un, J 30)

KANSAS

KANSAS STATE TEACHERS COLLEGE, Emporia 66801. Dr. Harold Durst, Department of Biology. *Environmental Science.* (Classes to be held in Emporia and Independence). (Un, JS 40)

KANSAS STATE UNIVERSITY, Manhattan 66502. Dr. Lyle J. Dixon, Department of Mathematics. *Topics in Mathematics for Secondary School Teachers.* (Classes to be held in Kansas City, Salina and Newton). (Un, JS 90)

WICHITA STATE UNIVERSITY, Wichita 67208. Dr. Michael P. Tilford, Department of Secondary Education. *The Man-Made World-ECCP.* (Un, S 20)

KENTUCKY

GEORGETOWN COLLEGE, Georgetown 40324. Dr. Roy A. Dobyns, Department of Mathematics. *Geometry, Probability and Statistics.* (Un, JS 25)

UNIVERSITY OF KENTUCKY, Lexington 40506. Dr. Joel Cunningham, Department of Mathematics. *Introduction to Probability and Statistics, Geometry from an Historical Viewpoint.* (Un, JS 30)

UNIVERSITY OF LOUISVILLE, Louisville 40208. Dr. Kiron C. Bordoloi, Department of Electrical Engineering. *Solid-State Electronic Devices and Circuits by the Keller Plan.* (Un, JS 20)

LOUISIANA

GRAMBLING COLLEGE, Grambling 71245. Dr. Samuel H. Douglas, Department of Mathematics. *Analysis, Geometry, Course Development.* (Un, JS 30)

LOUISIANA STATE UNIVERSITY, Baton Rouge 70803. Dr. Harry J. Bennett, Science Training Programs Office, P.O. Box F. *Marine Science and Wetlands Ecology.* (Classes to be held in Thibodaux). (Un, JS 25)

LOYOLA UNIVERSITY, New Orleans 70118. Professor Lewis J. Todd, Department of Mathematics. *Functions, Concepts and Representations, Differential and Integral Calculus.* (Seq, JS 75)

McNEESE STATE UNIVERSITY, Lake Charles 70601. Dr. S. M. Spencer, Department of Mathematical Sciences. *Mathematics for Junior High School Teachers, I and II.* (Un, J 25)

SOUTHEASTERN LOUISIANA UNIVERSITY, Hammond 70401. Dr. Newton S. Andrews, Department of Mathematics. *Algebraic Functions, Trigonometric Functions.* (Un, JS 20)

MAINE

UNIVERSITY OF MAINE, Orono 04473. Dr. John C. Mairhuber, Department of Mathematics. *Abstract Algebra, Elementary Number Theory.* (Seq*, JS 25)

UNIVERSITY OF MAINE AT PORTLAND-GORHAM, Portland 04103. Professor Carolyn N. Foster, Department of Mathematics, Science Building. *Problem Solving in Mathematics: A Computer Approach, Modern Developments in Euclidean Geometry.* (Un, S 15)

MARYLAND

UNIVERSITY OF MARYLAND, College Park 20742. Professor Stanley B. Jackson, Department of Mathematics. *Mathematics.* (Seq, JS 30)

UNIERSITY OF MARYLAND, College Park 20742. Dr. John W. Layman, Department of Physics and Secondary Education. *Earth Science-ESCP.* (Un, JS 50)

MORGAN STATE COLLEGE, Baltimore 21212. Dr. Kenneth F. Jerkins, Department of Science Education. *Bioecology, Advanced General Chemistry, Advanced Physics.* (Seq*, JS 75)

MASSACHUSETTS

AMERICAN INTERNATIONAL COLLEGE, Springfield 01109. Dr. Joseph P. Cebula, Director of Graduate Studies in Education. *Foundations of Chemistry (CHEMS).* (Un, JS 24)

BOSTON COLLEGE, Chestnut Hill 02167. The Reverend Stanley J. Bezuszka, S.J., Department of Mathematics. *History of Mathematics, Probability.* (Seq, JS 60)

BOSTON COLLEGE, Chestnut Hill 02167. Professor George T. Ladd, Department of Geology and Geophysics. *Environmental Science.* (Un, JS 30)

BOSTON STATE COLLEGE, Boston 02115. Professor G. A. Fairbanks, Department of Physics. *Physical Science (IPS, PS II), Physics (PPC).* (Un, JS 25)

BRIDGEWATER STATE COLLEGE, Bridgewater 02324. Professor Joseph B. Chiccarelli, Dean of Administration. *Biology, Chemistry, Earth Science, Mathematics, Physics.* (Un, JS 125)

EASTERN NAZARENE COLLEGE, Wollaston 02170. Dr. Floyd I. John, Department of Mathematics. *Probability and Statistics—Theory and Applications.* (Classes to be held in Norton). (Un, S 25)

FRAMINGHAM STATE COLLEGE, Framingham 01701. Professor John T. Murray, Department of Physics. *Descriptive Astronomy.* (Un, JS 20)

COLLEGE OF THE HOLY CROSS, Worcester 01610. The Reverend Robert B. MacDonnell, S.J., Department of Physics. *Physical Science.* (Un, J 20)

COLLEGE OF THE HOLY CROSS, Worcester 01610. Professor Leonard C. Sulski, Department of Mathematics. *Introductory Calculus: A Computer-Oriented Presentation.* (Un, JS 20)

WORCESTER POLYTECHNIC INSTITUTE, Worcester 01609. Professor Richard F. Morton, Department of Physics. *Chemistry, Mathematics.* (Seq*, S 35)

MICHIGAN

UNIVERSITY OF DETROIT, Detroit 48221. Dr. Lyle E. Mehlenbacher, Department of Mathematics. *Mathematics.* (Seq*, S 35)

UNIVERSITY OF DETROIT, Detroit 48221. Dr. Lyle E. Mehlenbacher, Department of Mathematics. *Mathematics for Junior High School Teachers.* (Seq, J 30)

EASTERN MICHIGAN UNIVERSITY, Ypsilanti 48197. Dr. J. R. Moore, Physics and Astronomy Department. *General Science-ISCS.* (Un, J 24)

MICHIGAN STATE UNIVERSITY, East Lansing 48823. Dr. Lauren G. Woodby, Department of Mathematics. *Concepts in Algebra, Concepts in Geometry, Mathematical Problems.* (Classes to be held in Grand Rapids). (Un, JS 35)

WAYNE STATE UNIVERSITY, Detroit 48202. Dr. Harold T. Slaby, Department of Mathematics. *Mathematics.* (Seq*, JS 33)

WAYNE STATE UNIVERSITY, Detroit 48202. Dr. H. W. Rossmoore, Department of Biology. *Environmental and Social Biology.* (Seq, JS 25)

WESTERN MICHIGAN UNIVERSITY, Kalamazoo 49001. Dr. George G. Mallinson, Dean, The Graduate College. *Biology, Chemistry, Earth Science, General Science, Mathematics, Physics.* (Seq, J 60)

WESTERN MICHIGAN UNIVERSITY, Kalamazoo 49001. Dr. Clarence J. Goodnight, Department of Biology. *Biology.* (Un, JS 40)

MINNESOTA

BEMIDJI STATE COLLEGE, Bemidji 56601. Dr. Gerald J. Smith, Department of Mathematics. *UICSM Algebra, UICSM Stretchers and Shrinkers and Motion Geometry, Solution to Pollution, Medical Ecology.* (Un, JS 40)

UNIVERSITY OF MINNESOTA, Minneapolis 55455. Dr. Darrell R. Lewis, Department of Economic Education. *Intermediate Economics.* (Un, S 25)

SAINT CLOUD STATE COLLEGE, St. Cloud 56301. Dr. Harold Hopkins, Department of Biology. *Environmental Science.* (Un, JS 20)

SAINT MARY'S COLLEGE, Winona 55987. Brother Charles Severin, Biology Department. *Terrestrial Ecology, Aquatic Ecology.* (Un, J 24)

MISSISSIPPI

ALCORN A. & M. COLLEGE, Lorman 39096. Dr. Henry L. Parker, Department of Biology. *Biology, Mathematics.* (Un, JS 30)

UNIVERSITY OF MISSISSIPPI (See page 32).

MISSISSIPPI VALLEY STATE COLLEGE, Itta Bena 38941. Dr. Thanumalaya P. Pillai, Department of Mathematics. *Mathematics for Junior High School Teachers.* (Classes to be held in Greenwood). (Un, J 30)

UNIVERSITY OF SOUTHERN MISSISSIPPI, Hattiesburg 39401. Dr. Isadore L. Sonnier, Department of Science Education. *Earth Science (ESCP) and Environmental Study (ES).* (Un*, J 30)

MISSOURI

THE LINDENWOOD COLLEGES, St. Charles 63301. Dr. Patrick F. Delaney, Jr., Department of Biology. *The Structure and Action of Proteins, Concepts of Ecology.* (Un, JS 30)

UNIVERSITY OF MISSOURI—KANSAS CITY, Kansas City 64110. Dr. Robert G. Anderson, Department of Biology. *Biology.* (Un, S 40)

MISSOURI STATE ECONOMICS PROJECT. *Introductory Economics.* Primarily for teachers of economics and social studies in Missouri. In-Service Institutes will be held at the following locations:

DRURY COLLEGE, Springfield 65802. Local Director: Professor Elbert B. Johnson.

UNIVERSITY OF MISSOURI—COLUMBIA, Columbia 65201. Project Director: Professor William C. O'Connor.

UNIVERSITY OF MISSOURI—KANSAS CITY, Kansas City 64110. Local Director: Professor Kenneth Hubbell.

UNIVERSITY OF MISSOURI—ROLLA, Rolla 65401. Local Director: Professor Curtis Adams.

UNIVERSITY OF MISSOURI—ST. LOUIS, St. Louis 63121. Local Director: Professor Joseph P. McKenna.

NORTHWEST MISSOURI STATE COLLEGE, Maryville 64468. Local Director: Professor Elwin K. DeVore.

SOUTHWEST MISSOURI STATE COLLEGE, Cape Girardeau 63701. Local Director: Professor Wayne E. Ewbank.

For further information concerning the Missouri State Economics Project and the seven institutes listed above, write: Professor William O'Connor, Missouri State Economics Project, 340B & PA Building, University of Missouri—Columbia, Columbia, Missouri 65201. (Un, JS 140)

SAINT LOUIS UNIVERSITY, St. Louis 63103. Dr. John J. Andrews, Department of Mathematics. *Mathematics.* (Seq, JS 30)

MONTANA

STATE OF MONTANA, Helena 59601. Mr. Alan D. Nicholson, Office of the Superintendent of Public Instruction. *Mathematical Applications and Model Building, Mathematics Laboratory for Underachievers, Special Mathematical Topics, Geometry from a Transformational Viewpoint, Mathematics in the Elementary School, History and Philosophy of Mathematics.* (Classes to be held in six Montana cities). (Un, JS 180)

NEBRASKA

UNIVERSITY OF NEBRASKA AT OMAHA, Omaha 68132. Dr. Merle E. Brooks, Department of Biology. *Fresh Water Invertebrates, Electronics, Project Physics-PPC.* (Seq, JS 40)

NEVADA

UNIVERSITY OF NEVADA, Reno 89507. Dr. John H. Trent, Department of Secondary Education. *Environmental Science.* (Un, JS 20)

NEW HAMPSHIRE

DARTMOUTH COLLEGE, Hanover 03755. Dr. William W. Ballard, Department of Biological Sciences. *Exploring the Local Biological World.* (Un, S 35)

NEW JERSEY

DREW UNIVERSITY, Madison 07940. Dr. Bernard Greenspan, Department of Mathematics. *Mathematics-SSMCIS II, III.* (Un, JS 24)

MONTCLAIR STATE COLLEGE, Upper Montclair 07043. Professor Albert Zabady, Department of Chemistry. *Chemistry for Biological Sciences.* (Un, S 25)

NEWARK COLLEGE OF ENGINEERING, Newark 07102. Professor Leon D. Landsman, Department of Physics. *Physics-PPC.* (Un, S 25)

NEWARK COLLEGE OF ENGINEERING, Newark 07102. Dr. John Droughton, Department of Mechanical Engineering. *Urban and Environmental Engineering.* (Un, S 30)

SAINT PETER'S COLLEGE, Jersey City 07306. Professor Francis A. Varrichio, Department of Mathematics. *Mathematics, Computer Science.* (Un, JS 40)

NEW MEXICO

NEW MEXICO INSTITUTE OF MINING AND TECHNOLOGY, Socorro 87801. Dr. Clay T. Smith, Department of Geosciences. *Environmental Earth Science.* One week of concentrated preliminary study, August 14-19, 1972. (Un, JS 20)

NEW YORK

ADELPHI UNIVERSITY, Garden City, Long Island 11530. Dr. Frederick A. Bettelheim, Department of Chemistry. *Atomic Structure and Chemical Bonding, Stereochemistry.* (Seq*, S 30)

ADELPHI UNIVERSITY, Garden City, Long Island 11530. Professor Eugene Levine, Department of Mathematics. *Algebra, Analysis, Projective Geometry, Convex Sets, Arithmetic Structures, Linear Algebra.* (Seq*, JS 100)

ADELPHI UNIVERSITY, Garden City, Long Island 11530. Dr. Leslie A. Sirkin, Department of Earth Sciences. *Environmental Awareness.* (Un, JS 25)

ASSOCIATED UNIVERSITIES, INC., BROOKHAVEN NATIONAL LABORATORY, Upton 11973. Dr. Glenn A. Price, Office of Scientific Personnel. *The Forms and Uses of Energy: Basic Scientific Concepts and their Applications.* (Un, S 25)

BROOKLYN COLLEGE, Brooklyn 11210. Professor Alvin Halpern, Department of Physics. *Physics and Astronomy for General Science Teachers.* (Un*, J 40)

BROOKLYN COLLEGE, Brooklyn 11210. Dr. Meyer Jordan, Department of Mathematics. *Mathematics and Computers.* (Un, JS 70)

THE CITY COLLEGE, New York 10031. Dr. Chester B. Kremer, Department of Chemistry. *Environmental Science.* (Un. JS 30)

FORDHAM UNIVERSITY, Bronx 10458. The Reverend Edward W. Brande, S.J., Department of Mathematics. *Mathematics.* (Seq*, JS 80)

HOFSTRA UNIVERSITY, Hempstead, Long Island 11550. Dr. Jerry B. Davis, School of Education. *Biology (BSCS).* (Un, S 24)

MANHATTAN COLLEGE, Bronx 10471. Professor B. John McNamara, Department of Mathematics. *Modern Algebra.* Includes summer program, July 5-August 14, 1973 in *Probability and Geometry.* (Seq, JS 30)

NEW YORK UNIVERSITY, New York 10012. Professor Martin D. Burrow, Department of Mathematics, 251 Mercer Street. *Mathematics.* (Seq, JS 210)

PACE COLLEGE, New York 10038. Dr. Anthony J. Konde, Department of Chemistry and Physical Sciences. *Analytical Methods.* (Classes to be held at New York City campus). *Astronomy.* (Classes to be held at Pleasantville campus). (Un, JS 50)

QUEENS COLLEGE, Flushing 11367. Dr. Devra Lee Davis, Department of Sociology; Dr. Jack Zevin, Department of Education. *Sociology (SRSS) and Anthropology.* (Un, JS 40)

STATE UNIVERSITY COLLEGE AT BUFFALO, Buffalo 14222. Dr. William C. Schefler, Department of Biology, 1300 Elmwood Avenue. *Population and Environmental Problems.* (Un, JS 25)

STATE UNIVERSITY COLLEGE AT BUFFALO, Buffalo 14222. Dr. Joseph S. Zingaro, Department of Chemistry, 1300 Elmwood Avenue. *Physical, Organic and Biological Chemistry.* (Un, S 30)

STATE UNIVERSITY OF NEW YORK AT ALBANY, Albany 12203. Dr. John G. Herlihy, Department of Educational Administration. *Man: A Course of Study.* (Un, JS 30)

STATE UNIVERSITY OF NEW YORK AT BINGHAMTON, Binghamton 13901. Dr. Donald R. Coates, Department of Geology. *Environmental Science.* (Un, JS 20)

SYRACUSE UNIVERSITY, Syracuse 13210. Dr. Alfred T. Collette, Department of Science Teaching. *Physical Science-ISCS.* (Un, J 25)

UNION COLLEGE, Schenectady 12308. Dr. Edwin F. Gillette, Department of Mathematics. *Environmental Chemistry, Mathematics and the Computer.* (Seq, JS 50)

YESHIVA UNIVERSITY, BELFER GRADUATE SCHOOL OF SCIENCE, New York 10033. Dr. Abe Gelbart, Director, In-Service Institute. *Mathematics.* (Seq, JS 250)

NORTH CAROLINA

EAST CAROLINA UNIVERSITY, Greenville 27834. Dr. Katye O. Sowell, Department of Mathematics. *Modern Mathematics for Junior High School Teachers.* (Un, J 20)

ELIZABETH CITY STATE UNIVERSITY, Elizabeth City 27909. Dr. Louise N. Sutton, Department of Physical Sciences and Mathematics. *Physical Science.* (Operating cooperatively with East Carolina University). (Un*, JS 80)

UNIVERSITY OF NORTH CAROLINA AT ASHEVILLE, Asheville 28801. Dr. S. Dexter Squibb, Department of Chemistry. *Special Topics in Chemistry: Modern Chemistry for Biology and Chemistry Teachers.* (Seq, S 20)

UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL, Chapel Hill 27514. Dr. William A. White, Department of Geology. *Physical Geology.* (Classes to be held in Reidsville). (Un, J 20)

NORTH CAROLINA ACADEMY OF SCIENCE, Meredith College, Raleigh 27602. Write: Professor Anna Joyce Reardon, Department of Physics, University of North Carolina at Greensboro, Greensboro 27412. *Conference on Recent Advances in Physics.* (Conference to be held at the University of North Carolina at Chapel Hill on December 28-29, 1972). (Un, JS 120)

WAKE FOREST UNIVERSITY, Winston-Salem 27109. Dr. Ben M. Seelbinder, Department of Mathematics. *Finite Mathematics with Calculus for Teachers.* (Seq, JS 25)

NORTH DAKOTA

UNIVERSITY OF NORTH DAKOTA, Grand Forks 58201. Dr. Francis L. Howell, Department of Physics. *Physics-PPC.* (Classes to be held in Grand Forks and Bismark). (Un, S 30)

UNIVERSITY OF NORTH DAKOTA, Grand Forks 58201. Dr. David Ramsett, Department of Economics. *Introductory Economics.* (Un, JS 25)

NORTH DAKOTA STATE UNIVERSITY, Fargo 58102. Dr. Robert D. Koob, College of Chemistry and Physics. *Advanced Chemistry for High School Teachers.* (Classes to be offered via video tape in Alexandria, Fargo, Grand Forks, Bismark, Jamestown, Devils Lake, Williston, Minot and Dickinson). (Un, S 30)

OHIO

ASHLAND COLLEGE, Ashland 44805. Professor George Tarbuck, Center for Business and Economic Education. *Economics.* (Classes to be held in Ashland, Mansfield and Wooster).
(Un, JS 50)

BOWLING GREEN STATE UNIVERSITY, Bowilng Green 43403. Dr. J. Frederick Leetch, Department of Mathematics. *Algebraic Structures, Topics in Modern Geometry, Analysis, Seminar in Secondary School Mathematics.* (Classes to be held at Bowling Green and the University of Toledo). (Seq, JS 30)

UNIVERSITY OF CINCINNATI, Cincinnati 45221. Dr. Raymond H. Rolwing, Department of Mathematics. *Junior High School Mathematics, Senior High School Mathematics, Computer-Oriented Calculus, Mathematics for the Social Sciences.* (Classes to be held in Covington, Kentucky, Blue Ash and Cincinnati). (Un, JS 100)

JOHN CARROLL UNIVERSITY, Cleveland 44118. Dr. Harry C. Nash, Department of Physics. *Modern Physics.* (Seq, S 20)

JOHN CARROLL UNIVERSITY, Cleveland 44118. Dr. Harry C. Nash, Department of Physics. *Selected Topics in Physics for General Science and Physical Science Teachers.* (Un, JS 40)

KENT STATE UNIVERSITY, Kent 44242. Dr. Kenneth B. Cummins, Department of Mathematics. *Mathematics.* (Un, S 40)

KENT STATE UNIVERSITY, Kent 44242. Dr. James A. Phillips, Jr., Department of Secondary Education. *Social Science, Man: A Course of Study-MACOS.* (Un, J 25)

MIAMI UNIVERSITY, Oxford 45056. Dr. Charles M. Vaughn, Department of Zoology. *Aquatic Biology for Secondary Biology and General Science Teachers.* (Un, JS 25)

OHIO DOMINICAN COLLEGE, Columbus 43219. Sister Mary A. Matesich, Department of Chemistry. *Selected Topics in Chemistry for the Junior High Curriculum.* (First semester only). (Un, J 30)

THE OHIO STATE UNIVERSITY, Columbus 43210. Dr. William R. Riley, Department of Physics. *Individualized Laboratory Physics for Teachers.* (Un, S 25)

THE OHIO STATE UNIVERSITY, Columbus 43210. Dr. Victor J. Mayer, Faculty of Science Education. *Astronomy* (IAP). (Un, JS 20)

OHIO UNIVERSITY, Athens 45701. Dr. Gerald F. Draayer, Department of Economic Education. *Economics in the Curriculum.* (Classes to be held in Portsmouth and the respective school systems of the participants). (Un, JS 35)

OKLAHOMA

NORTHWESTERN STATE COLLEGE, Alva 73717. Dr. Stearns W. Rogers, Department of Chemistry. *Molecular and Environmental Biology for High School Science Teachers.* (Seq, JS 20)

THE UNIVERSITY OF OKLAHOMA, Norman 73069. Dr. Richard V. Andree, Department of Mathematics, Box 457 Central Mail Facility. *Computer Programming, Computer Simulations in Social and Biological Sciences, Matrices, Number Theory, Enrichment Materials, Mathematics for Science Teachers, Mathematics for the Junior High Curriculum, Mathematics for Slow Learners, The Use of Mini-Computers in Teaching, Algebra with Computer Applications.* (Un, JS 120)

OKLAHOMA STATE UNIVERSITY, Stillwater 74074. Dr. J. Robert Purvis, College of Education. *Man: A Course of Study (Anthropology).* (Un, JS 40)

OREGON

REED COLLEGE, Portland 97202. Dr. Kenneth E. Davis, Department of Physics. *Engineering Concepts Curriculum Project-ECCP.* (Un, S 25)

PENNSYLVANIA

CARLOW COLLEGE, Pittsburgh 15213. Dr. William A. Uricchio, Department of Biology. *Biology (BSCS).* (Seq, JS 30)

DREXEL UNIVERSITY, Philadelphia 19104. Dr. Robert L. Hamman, Department of Economics. *Economics.* (Seq*, JS 35)

EDINBORO STATE COLLEGE, Edinboro 16412. Dr. Michael C. Schneider, Department of Earth Sciences. *Environmental Earth Science (ESCP, ES, CAGWPES).* (Un, JS 25)

GANNON COLLEGE, Erie 16501. Professor Stanley J. Zagorski, Department of Biology. *Environmental Science.* (Un, JS 30)

LAFAYETTE COLLEGE, Easton 18402. Dr. Charles W. Saalfrank, Department of Mathematics. *Statistics I and II.* (Un, JS 30)

MILLERSVILLE STATE COLLEGE, Millersville 17551. Professor William B. McIlwaine, Department of Earth and Space Sciences. *Problems in Earth Science, Problems in Biological Sciences.* (Un, JS 50)

UNIVERSITY OF PENNSYLVANIA, Philadelphia 19104. Dr. Emily S. Girault, Graduate School of Education. *Anthropology and Sociology.* (Un, S 60)

UNIVERSITY OF PENNSYLVANIA, Philadelphia 19104. Dr. Kenneth D. George, Graduate School of Education. *Engineering Concepts Curriculum Project-ECCP.* (Un, S 24)

THE PENNSYLVANIA STATE UNIVERSITY, University Park 16802. Dr. Lars Jansson, 302 Rackley Building. *Mathematics and Computers.* (Un, JS 40)

THE PENNSYLVANIA STATE UNIVERSITY, McKEESPORT CAMPUS, McKeesport 15132. Professor C. William Fette, Department of Physics. *Modern Physics and Chemistry with Computer Applications.* (Un, S 30)

UNIVERSITY OF SCRANTON, Scranton 18510. Dr. Harry B. Strickland, Dean, Graduate School. *Cell and Molecular Biology, Discrete Mathematics-Geometry, Selected Topics in Mathematics for Physics Teachers.* (Seq, S 60)

TEMPLE UNIVERSITY, Philadelphia 19122. Professor Thomas H. Slook, Department of Mathematics. *Mathematics.* (Seq, JS 30)

TEMPLE UNIVERSITY, Philadelphia 19122. Dr. Joseph S. Schmuckler, Department of Science Education. *Industry-Related Instrumental Methods for Secondary School Teachers of Chemistry.* (Un, S 15)

TEMPLE UNIVERSITY, Philadelphia 19122. Dr. Peter H. Martorella, Social Science Education. *Anthropology: Focus on the Urban World.* (Un, JS 30)

VILLANOVA UNIVERSITY, Villanova 19085. Sister M. Cordia Ehrmann, Department of Mathematics and Secondary School Science. *Astronomy, Environmental Chemistry, Biology, Geology, Teaching of Mathematics, Computers, Introductory Physical Science.* (Un, JS 92)

WEST CHESTER STATE COLLEGE, West Chester 19380. Dr. Richard G. Branton, Department of Mathematics. *Models and Simulation, Problem Seminar, Curriculum Development.* (Un, JS 50)

SOUTH CAROLINA

THE CITADEL, Charleston 29409. Professor J. R. Ingraham, Department of Mathematics. *Mathematics.* (Seq, JS 30)

SOUTH CAROLINA STATE COLLEGE, Orangeburg 29115. Dr. Lewie C. Roache, Department of Natural Sciences. *Biology, Chemistry.* (Un, JS 50)

SOUTH DAKOTA

UNIVERSITY OF SOUTH DAKOTA (See page 33).

TENNESSEE

KNOXVILLE COLLEGE, Knoxville 37921. Professor Trenton Cooper, Department of Physics. *Discovery Approach in Modern Mathematics.* (Un, JS 25)

TENNESSEE TECHNOLOGICAL UNIVERSITY, Cookeville 38501. Dr. Richard K. Fletcher, Jr., Department of Secondary Education. *Earth Science-ESCP.* (Seq, JS 25)

TEXAS

UNIVERSITY OF HOUSTON, Houston 77004. Dr. John L. Creswell, Department of Curriculum and Instruction. *Mathematics.* Includes summer program, July 12-August 17, 1972. (Un, J 30)

INCARNATE WORD COLLEGE, San Antonio 78209. Sister Joseph Marie Armer, Department of Biology. *Field and Laboratory Biology, Physical Science.* (Seq, JS 30)

NORTH TEXAS STATE UNIVERSITY, Denton 76203. Dr. Floyd Vest, Department of Mathematics. *Number Systems, Structure of Algebra.* (Un, JS 24)

NORTH TEXAS STATE UNIVERSITY, Denton 76203. Dr. William A. Luker, Center for Economic Education, Department of Economics. *Introductory Economics, Modern Economic Problems in Contemporary Perspective.* (Classes to be held in Richardson and Fort Worth). (Un, JS 30)

TEXAS A&M UNIVERSITY, College Station 77843. Dr. Melvin C. Schroeder, Department of Geology. *Geology and Oceanography.* (Classes to be held in Waco). (Seq, JS 25)

TEXAS TECH UNIVERSITY, Lubbock 79409. Dr. Charles L. Riggs, P.O. Box 4010, Department of Mathematics. *Elementary Theory of Numbers, Geometry for Teachers.* (Un, JS 25)

UTAH

THE UNIVERSITY OF UTAH, Salt Lake City 84112. Dr. E. Allan Davis, Department of Mathematics. *Mathematics for Junior High School Teachers.* (Seq, J 55)

UTAH STATE UNIVERSITY, Logan 84321. Professor Antone H. Bringhurst, Department of Mathematics. *Mathematics-SSMCIS Courses I and II.* (Classes to be held in Ogden). (Un, JS 40)

VIRGINIA

HAMPTON INSTITUTE, Hampton 23368. Dr. Victor H. Fields, Department of Chemistry. *Organic Chemistry, Linear and Matrix Algebra.* (Seq, JS 40)

OLD DOMINION UNIVERSITY, Norfolk 23508 Dr. Allen K. Clark, Department of Chemistry. *Earth Science, Physics, Chemistry.* (Un, JS 24)

UNIVERSITY OF VIRGINIA, Charlottesville 22903. Dr. Ertle Thompson, Department of Science Education. *Earth Science (ESCP).* (Classes to to be held in Newport News, Abingdon, Staunton-Harrisonburg and Martinsville). *Chemistry (CHEMS).* (Classes to be held in Staunton-Harrisonburg). *Biology.* (Classes to be held in Bedford-Lynchburg). *Mathematics.* (Classes to be held in Richmond). *Environmental Ecology.* (Classes to be held in Hampton and Fairfax). (Un, JS 200)

VIRGINIA STATE COLLEGE (See page 33).

WASHINGTON

FORT WRIGHT COLLEGE, Spokane 99204. Sister Ione Gautereaux, Department of Science. *River Biology, Chemical Ecology, Anthropology, Geology of the Pacific Northwest, Computer Programming, Current Topics in Molecular Biology.* (Seq, JS 7?)

PACIFIC LUTHERAN UNIVERSITY, Tacoma 98447. Dr. John O. Herzog, Department of Mathematics. *Mathematics.* (Un, J 35)

UNIVERSITY OF WASHINGTON, Seattle 98105. Dr. Thomas G. Stobbe, Division of Metallurgical Engineering, 326 Roberts Hall. *Applied Materials Science for Secondary Teachers of Science.* (Seq, JS 35)

WEST VIRGINIA

WEST VIRGINIA UNIVERSITY, Morgantown 26506. Professor I. Dee Peters, Department of Mathematics. *Foundations of Algebra.* (Classes to be held at the Graduate Center in Charleston). *Special Topics for Teachers.* (Classes to be held in Franklin, Glenville and Kingwood). Includes summer program, July 31-August 18, 1972 in *Special Topics in Algebra.* (Classes to be held at the Graduate Center in Charleston). (Un, JS 130)

WISCONSIN

MILWAUKEE AREA TECHNICAL COLLEGE, Milwaukee 53203. Dr. Thomas J. McHale, Research Coordinator. *Technical Mathematics.* (Classes to be held in Milwaukee and Waukesha). (Un, S 70)

UNVERSITY OF WISCONSIN—EAU CLAIRE, Eau Claire 54701. Dr. Marshall E. Wick, Department of Mathematics. *Probability, Mathematical Logic, Computer Mathematics, Mathematics for Junior High Teachers.* Summer program only, June 12-August 4, 1972. (Un, JS 40)

UNIVERSITY OF WISCONSIN—GREEN BAY, Green Bay 54302. Dr. James W. Busch, School of Professional Studies. *Engineering Concepts Curriculum Project-ECCP.* (Un, S 25)

UNIVERSITY OF WISCONSIN—RIVER FALLS, River Falls 54022. Dr. Lyle C. Hall, Department of Chemistry. *Organic, Biological and and Analytical Chemistry for Chemistry and Biology Teachers.* (Un, JS 24)

UNIVERSITY OF WISCONSIN—SUPERIOR, Superior 54880. Dr. Phillip R. Brieske, Center for the Advancement of Science Education. *General Science-ISCS.* (Classes to be held on UW campuses in Oshkosh, Platteville, River Falls, Superior and Whitewater). (Un, J 180)

UNIVERSITY OF WISCONSIN—SUPERIOR, Superior 54880. Dr. Rudy G. Koch, Department of Biology. *Environmental Science.* (Classes to be held on UW campuses in Eau Claire, Stevens Point, Superior and Whitewater). (Un, JS 160)

UNIVERSITY OF WISCONSIN—SUPERIOR, Superior 54880. Professor Donald M. Dailey, Department of Physics. *Leadership Training Conference for the Development of Resource Personnel in Environmental Science.* Summer program only, August 7-18, 1972. (Conference to be held at the Chippewa Lake Field Station). (Un, S 25)

WYOMING

UNIVERSITY OF WYOMING (See page 34).

LIST OF COMPREHENSIVE PROJECTS, 1972-73

Comprehensive Projects represent integrated approaches to teacher education with both pre-service and in-service components that offer opportunities for full- and part-time study during the academic year and summer. The following brief description of each project indicates the general nature of the academic offerings. Each project gives priority to applicants from the particular geographic area indicated in the project description. In addition to the special features of individual projects set forth below, each Comprehensive Project offers part-time study opportunity for teachers at off-campus centers and provides consultive services to teachers and administrators in the indicated service area. Teachers interested in pursuing a coordinated sequence of work, which might involve various combinations of full-time and part-time academic year and summer study, leading to a specific goal should contact individual project directors at the indicated addresses for details.

University of Arkansas, Fayetteville, Arkansas 72701

Study in *Mathematics* for junior and senior high school teachers of mathematics in Arkansas. Opportunities available to teachers at all levels of preparation. Program includes consideration of curriculum development, conduct of in-service projects, supervision of mathematics instruction, and teaching strategies, as well as subject matter. Provision is made for the state-wide coordination of the pre-service education of secondary mathematics teachers. Dr. William R. Orton, Department of Mathematics.

University of Mississippi, University, Mississippi 38677

Study in *Biology, Chemistry* and related *Physics* for junior and senior high school teachers of science, primarily in Mississippi. Opportunities available to secondary teachers at all levels of preparation, with special programs for key

teachers, supervisors, supervisor-trainees and teacher-interns. Dr. William H. Norman. Science Education Center.

University of Notre Dame, Notre Dame, Indiana 46556

Study in *Mathematics* for junior and senior high school teachers of mathematics. Priority given to teachers in Illinois, Indiana, Michigan and Ohio. Instructional program centered around sequence leading to M.S. degree in mathematics. Opportunities available for training in the conduct of in-service programs. Special programs for intern-teachers and for supervisor-trainees. Dr. Abraham Goetz, Department of Mathematics.

San Jose State College, San Jose, California 95114

Study in *Mathematics* for junior and senior high school teachers of mathematics in California counties north of Santa Barbara County and in western Nevada. Opportunities available to teachers at all levels of preparation include programs in computer science, curriculum materials, research participation, and the conduct of in-service programs. Special program for intern-teachers and for supervisor-trainees. Dr. Robert Pruitt, Department of Mathematics.

University of South Dakota, Vermillion, South Dakota 57069

Study in *Chemistry* and *Biology* for junior and senior high school teachers of these subjects, primarily in Iowa, Minneosta, Nebraska, North Dakota and South Dakota. Opportunities available for training in the conduct of in-service programs which emphasize new curriculum materials. Special program for intern-teachers. Dr. Charles R. Estee, Department of Chemistry.

Virginia State College, Petersburg, Virginia 23803

Study in the *Life (Biological)* and *Earth Sciences* for junior and senior high school teachers

of these subjects primarily in Virginia. Opportunities available to biology teachers having a basic background in the life sciences, and to earth science teachers having an undergraduate major in one of the scientific disciplines but little or no background in the geological sciences. Special pre-service programs at the pre- and post-baccalaureate levels. Dr. Richard H. Dunn, Department of Biology.

University of Wyoming, Laramie, Wyoming 82070

Study in the *Biological* and/or *Physical Sciences* for junior and senior high school teachers of these subjects, primarily in the Rocky Mountain and Plains states. Opportunities available for training in the conduct of in-service programs at "portal schools" dealing with new curriculum materials, research participation together with students from the teachers' home school, and the development of classroom and laboratory materials. Special program for intern-teachers. Dr. Samuel W. Harding, Department of Physics.

OTHER NATIONAL SCIENCE FOUNDATION PROGRAMS FOR TEACHERS

The National Science Foundation will furnish, upon request, directories listing institutions taking part in the NSF-supported teacher education programs listed below:

Summer Institutes for Secondary School Teachers of Science, Mathematics, and Social Science, 1973 (E72-P-11). Available January 1973. Application deadline for 1973 will be February 15, 1973.

Academic Year Institutes for Secondary School Teachers and Supervisors of Science, Mathematics, and Social Science, 1973-74 (E72-P-9). Available December 1972. Application deadline for 1973-74 will be January 20, 1973.

Programs designed for junior college and college teachers are listed in the *College Teacher Programs — Directory* — (E72-U-9). Available December 1972. See directory for application deadlines.

The National Science Foundation supports *Cooperative College-School Science Programs* which are locally oriented and concerned with improvements of school systems, including teacher training in science and mathematics. The directory (E73-P-23) of projects for the summer of 1973 and academic year 1973-74 will be available in January 1973. These projects usually are given extensive local publicity. Teacher-participants are personnel of the cooperating school systems.

Please request each kind of directory separately. Requests may be sent at any time and the directory will be mailed when available. Print or type your name, address, zip code, and the exact title and publication number of the desired program directory on a postal card and send it to:

Distributions Section
Administrative Services Office
National Science Foundation
Washington, D.C. 20550

National Science Foundation
Washington, D.C. 20550

Official Business
PENALTY FOR PRIVATE USE, $300

Postage and Fees Paid
National Science Foundation

U.S.MAIL

37

MAY 1972

NSF 72-8